

**United States District Court
District of Massachusetts**

Mizuho Orthopedic Systems, Inc.,)
Plaintiff,)
v.)
Allen Medical Systems, Inc., et al.,) Civil Action No.
Defendants.) 21-10979-NMG

MEMORANDUM & ORDER

Gorton, J.

Plaintiff Mizuho Orthopedic Systems, Inc. ("Mizuho" or "plaintiff") is the holder of several patents disclosing technical innovations in the field of specialty surgical tables. In June, 2021, Mizuho sued defendants Allen Medical Systems, Inc., ("Allen") and Hill-Rom, Inc., ("Hill-Rom" and, together with Allen, "defendants") alleging infringement of one of those patents, United States patent number 10,888,481 ("the '481 Patent"). In August, 2021, Mizuho filed an amended complaint which added a count for infringement of another such patent, United States patent number 9,713,562 ("the '562 Patent" and, together with the '481 Patent, "the Asserted Patents"). A second amended complaint, filed in September, 2021, alleges substantially the same two counts. Defendants deny the substance of the allegations.

The parties have submitted eight claims of the Asserted Patents for construction. The Court convened a Markman hearing on April 27, 2022, at which counsel offered their proposed constructions. The Court's ruling as to those claims follows.

I. Overview of the Patented Technology

The Asserted Patents are both directed to specialty surgery tables. Specialty surgery tables are used in complex medical procedures, such as spinal operations, which often require an anesthetized patient to be re-positioned during surgery. The "top" of a specialty surgery table may need to be moved up or down or be rotated on a horizontal axis and, accordingly, a wide range of movement is a desirable feature. Because of the risk of harm to the patient from undesired or unexpected movement of the table, safety mechanisms which reliably lock the surgery table into place are also necessary.

II. Analysis

A. Principles of Claim Construction

In analyzing a patent infringement action, the Court must 1) determine the meaning and scope of the patent claims asserted to be infringed and 2) compare the properly construed claims to the infringing device. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996). The first step, known as claim construction, is an issue of law for the court to decide. Id. at 979. The second

step is determined by the finder of fact. Id.

The Court's responsibility in construing claims is to determine the meaning of claim terms as they would be understood by persons of ordinary skill in the relevant art. Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001). The meanings of the terms are initially discerned from three sources of intrinsic evidence: 1) the claims themselves, 2) the patent specification and 3) the prosecution history of the patent. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83 (Fed. Cir. 1996).

The claims themselves define the scope of the patented invention. See Philips, 415 F.3d at 1312. Claim terms are generally given their "ordinary and customary meaning", which is the meaning that a person skilled in the art would attribute to the claim term. See id. at 1312-13. Even if a particular term has an ordinary and customary meaning, however, a court may need to examine the patent as a whole to determine whether that meaning controls. Id. at 1313 ("[A] person of ordinary skill in the art is deemed to read the claim term in the context of the entire patent"); see also Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) (noting that a court cannot construe the ordinary meaning of a term "in a vacuum"). Ultimately, the correct construction will be one that stays true to the claim language and most naturally

aligns with the patent's description of the invention[.]

Id. at 1316 (citation omitted).

The patent specification is

the single best guide to the meaning of a disputed term [because it may reveal] a special definition given to a claim term that differs from the meaning it would otherwise possess [or contain] an intentional disclaimer, or disavowal, of claim scope by the inventor.

Phillips v. AWK Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). The Court should also consult the prosecution history to see how the inventor and United States Patent and Trademark Office ("the PTO") understood the patent and to ensure the patentee does not argue in favor of an interpretation it has disclaimed. Id. at 1317.

In the rare event that analysis of the intrinsic evidence does not resolve an ambiguity in a disputed claim term, the Court may turn to extrinsic evidence, such as inventor and expert testimony, treatises and technical writings. Id. at 1314. Although extrinsic evidence may be helpful in construing claims, the intrinsic evidence is afforded the greatest weight in determining what a person of ordinary skill would have understood a claim to mean. Id. at 1324.

B. The '481 Patent

1. The Technology

The '481 Patent claims an adjustable support apparatus for

a surgery table. The platform, i.e. the "top" of the table, is attached on at least one end to a carriage which comprises handles and a pawl operator, the latter of which interacts with a gear rack located on a tower, i.e. the "side" of the table. (A pawl is a movable lever whose free end engages with a gear rack.) When a pawl is engaged with the gear rack, the carriage (and thus the platform) is locked in place and cannot move vertically. When the pawl is released, i.e. disengaged from the gear rack by rotation of a knob on the carriage, the carriage can be moved vertically.

The specification of the '481 Patent explains that prior art tables locked their platforms in place with pins inserted laterally through holes in prior art towers. While functional, this approach "require[d] great care on the part of the surgical team" to prevent the accidental dropping of the platform (and the patient). The specification avers that even when used correctly, the prior art tables were nevertheless "often difficult and inconvenient". The claimed invention, which uses pawls and gears to lock the platform securely in place, improves upon the prior art by enabling easy manipulation of the platform and reducing the risk of a sudden, unintentional drop.

2. Disputed Claim Terms

- a. **move[s][ing]/travel in [the] upward and downward directions** (Claims 1, 3, 6, 8-9, 11-12, 20, 22, 26, 30, 36, 40, 42, 44)

The parties disagree as to whether the first disputed term requires construction by the Court at all. Mizuho proposes the following construction:

move[s][ing]/travel in [the] upward and downward directions such that a pawl moves to, and can intermesh with, a different recess in the gear rack.

Defendants, on the other hand, submit that no construction is necessary.

The crux of the parties' dispute is whether the term "move[s][ing]/travel in [the] upward and downward directions" means movement by a pawl (and the attached carriage) from one recess in the gear rack to another, or whether it may encompass other movement, such as that of a pawl within a recess of a gear rack. Mizuho submits that the term contemplates only inter-recess movement, and avers that construing it such that the intra-recess jiggle of a pawl which is not flush to the abutting shoulders of the gear rack could constitute "upward and downward" movement would be contrary to the claims and specification. Defendants contend that the plain meaning of the term encompasses intra-recess movement and that Mizuho's construction, far from clarifying the meaning of the term, amounts to an impermissible attempt to re-write it.

Mizuho has the better of the argument. The intrinsic evidence indicates that the disputed term encompasses only inter-recess movement. See Phillips, 415 F.3d at 1313 (explaining that "a person of ordinary skill in the art is deemed to read the claim term in the context of the entire patent, including the specification"). For instance, Claim 3 states that the pawl mechanism engage[s] and disengage[s] the gear rack as the carriage moves in the upward and downward directions.

Claim 8 specifies that the pawl mechanism re-engages the gear rack "at a desired location in the upward and downward directions", and Claim 12 explains that the carriage is "prevented from moving when a pawl is engaged". Each claim suggests that vertical movement is predicated upon disengagement of the pawl mechanism and occurs when the pawls move from one recess to another. Nowhere in the claims is intra-recess movement discussed or implied, and the disputed term, taken in its context, indicates that the vertical movement to which it refers is between recesses in the gear rack.

The specification supports the same conclusion. As in the claims, when vertical movement is discussed in the specification it concerns only inter-recess movement. That interpretation is, moreover, consistent with the aims of the invention. Prior art tables permitted vertical movement when a pin threaded laterally

through a column was removed. The innovation of the '481 Patent as it concerns vertical movement is to enable the carriage to travel "upwardly and downwardly relative to a tower through a ratchet mechanism", improving patient safety. Nowhere is it suggested that the slight movement of the carriage due to a pin or a pawl that sits less than entirely flush to its respective recess presented a problem that the restriction on vertical movement contemplates or purports to solve.

The Court accordingly concludes that movement in the upward and downward directions means movement between recesses. It will not, however, adopt Mizuho's construction in full because "intermesh" is unduly confusing and accomplishes nothing that the simpler term "mesh" does not. The first disputed term will thus be construed as follows:

move[s][ing]/travel in [the] upward and downward directions such that a pawl moves to and can mesh with a different recess in the gear rack.

b. coupled to (Claims 1-3, 12, 14, 18, 20-22, 26, 44)

The parties dispute whether the term "coupled to" is restricted to direct connections or may also encompass indirect connections. Mizuho proposes a construction of "directly or indirectly connected to". Defendants contend that no construction is necessary but urge that if the Court does construe the term, it should adopt the construction "directly

fastened together or connected".

The Court declines to adopt defendants' construction, which finds little support in the claims, the specification or the ordinary meaning of "coupled to". The term "coupled to" as used in the '481 Patent denotes several kinds of structural and functional relationships. Some of those relationships involve direct fastening, such as that between the tower and the crossbar described in Claim 44. Others do not: the platform is coupled to the carriage by a combination of "at least one engagement surface and at least one claw-like connector" as described in Claim 14. Further, some couplings that are not enabled by an intervening element, such as the pawl mechanism and the gear rack or the carriage and the tower, nevertheless contemplate relative movement of the coupled elements which cannot fairly be said to be fastened together.

Defendants warn of overbreadth, citing In re Power Integrations, Inc., 884 F.3d 1370 (Fed. Cir. 2018), a case in which the Federal Circuit Court of Appeals ("the Federal Circuit") reversed an "overly expansive" construction that described two components joined into a single electrical circuit as coupled to each other. That concern is unfounded. In cases concerning mechanical systems, which the Court considers more apposite, the Federal Circuit and other sessions of this court have construed "coupled to" in a manner similar to that proposed

by Mizuho. See, e.g. Allen Med. Sys. v. Schuerch Corp., No. 15-13024-GAO, 2020 U.S. Dist. LEXIS 112970, (D. Mass. June 13, 2020) (construing “coupled to” as “joined or connected to” without limitation as to whether the connection is direct or indirect); Bradford v. Conteyor N. Am., Inc., 603 F.3d 1262, 1270 (Fed. Cir. 2010) (holding that “coupled to” should “be construed broadly so as to allow an indirect attachment”).

The Court therefore will construe “coupled to” as “directly or indirectly connected to”.

c. disengage one or more pawls from a gear rack / the pawl mechanism . . . configured to engage and disengage the gear rack / move the at least one pawl into and out of engagement with the at least one gear rack / the pawl mechanism configured to engage and disengage the gear rack / disengage and engage one or more pawls from the gear rack (Claims 1, 3-4, 8-10, 26-27, 36, 38-41, 44)

Stripped of its verbiage, the dispute as to this term is whether “intermesh and stop intermeshing” or “attach and release” more accurately characterizes the ‘481 Patent’s gear-and-pawl mechanism. Mizuho would construe “engage” and its variants as “intermesh” whereas defendants prefer “attach and release”.

Defendants assert in their claim construction briefs that Mizuho’s construction should be rejected because it purports to re-write the claims to substitute the concept of “intermeshing” for “engaging”. They do not, however, explain how the two

concepts differ. In its briefs, Mizuho avers that the pawls do, in fact, "intermesh" with the gears but similarly provides little explanation for how "intermesh" differs from "attach" or "engage", if at all.

Some gloss was provided at the Markman hearing. There, Mizuho argued that "intermesh" characterized the interaction between the pawls and the gear rack more accurately than "engage" because "intermesh" captures the fact that there are multiple points of overlap between the pawls and the gear rack. Defendants, in essence, reprised the arguments made with respect to the first disputed term and contended that "attach and release" was a better construction because, unlike "intermesh", it provides that vertical movement is precluded upon attachment of the pawls to the gear rack and allowed upon their release.

The Court has determined, however, that the claimed vertical movement exclusively concerns the inter-recess travel of the carriage. Thus, to the extent "attach and release" purports to limit intra-recess movement of the pawl-and-carriage apparatus, it is inapposite for the same reasons expounded in the context of the first disputed term. The Court is disinclined to adopt the term "intermesh", again for the reasons explained in the context of the first term.

The Court therefore will construe the term as follows:
stop meshing with one or more pawls from a gear rack / the

pawl mechanism configured to mesh with and stop meshing with the gear rack / move the at least one pawl into and out of meshing with the at least one gear rack / the pawl mechanism configured to mesh with and stop meshing with the gear rack / stop meshing with and mesh with one or more pawls from the gear rack

d. a gear rack (All asserted claims)

The parties next dispute the construction of "a gear rack".

As claimed by the `481 Patent, the gear rack sits on the tower and is traversed by a carriage. Mizuho submits that the meaning of the term "a gear rack" is plain and construction of the term unwarranted although it proposes, in the alternative, "a gear oriented in a straight line". Defendants contend, however, that "a gear rack" does not possess a plain and ordinary meaning and should be construed as "a linear gear".

There is little, if any, substantive difference between the parties' submissions and their disagreement devolves to the relative clarity of the claim language and the proffered constructions. The Court concludes that "a linear gear" is the best of the options because it evokes an accurate and accessible contrast with a perhaps-more-familiar circular gear.

e. a slide lock knob (Claims 1-11, 27, 31, 33, 35, 37, 43, 44-54)

With respect to "a slide lock knob", defendants proffer a functional construction, namely "a knob that actuates a slide lock". Mizuho contends that the term has a plain and ordinary meaning but, in the alternative, submits that the Court should

construe "slide lock knob" as "a knob configured to be rotated".

Some context is necessary. Claim 27 explains that rotation of the slide lock knob disengages the pawls from the gear rack and allows for vertical movement of the carriage. Subsequent claims describe that process in detail. The pawls disengage from the gear rack due to the rotational movement of the slide lock knob, which is transformed into lateral movement of an attached "lever lock actuator" itself connected to the pawls in such a fashion that, when the lever lock actuator moves laterally, the pawls rotate out of engagement with the gear rack. Turning the slide lock knob in the other direction reverses the process and causes the pawls to re-engage with the gear rack.

The parties dispute whether that system constitutes a slide lock. Defendants aver that it does and argue that Mizuho's construction would "completely read 'slide lock' out of the term". Mizuho contends that, notwithstanding the use of the term "slide lock knob", there is no slide lock in the '481 patent and defendant's construction would impose a new and unwarranted limitation.

On balance, the evidence favors Mizuho's construction. The claims are inconsistent in their nomenclature—Claim 28, for instance, refers to both a "slide lock knob" and a "lever lock actuator"—and it is not immediately apparent whether the claimed

apparatus is a slide lock, a lever lock or something else. The Court considers it significant, however, that every time the phrase "slide lock" appears it is followed directly by "knob", suggesting that "slide lock" describes the kind of knob used rather than the locking mechanism as a whole. Further cautioning against reading "slide lock" into the claims is that the locking apparatus is described in detail and to the extent it is a slide lock the claims already contain all the relevant limitations.

The Court will therefore construe the term "a slide lock knob" as "a knob configured to be rotated".

C. The '562 Patent

1. The Technology

The '562 Patent is directed to an adjustable support apparatus for a surgery table. The apparatus comprises a tower and a crossbar to which the tower connects. The crossbar has two openings, the first of which consists of a recess and an undercut hollow and the second of which consists of a recess and a spring loaded plunger. The tower, in turn, has two protuberances which engage the two openings of the crossbar in the following manner.

The first protuberance consists of a cylinder on the side of which there is a "boss", which is a sort of knob or protrusion. The first protuberance enters the first opening

from above, with the tower at an angle to the crossbar, i.e. the tower and the crossbar occupy different vertical planes. Once the first protuberance has engaged the first opening, the tower is rotated into vertical alignment with the crossbar. This has the effect of locking the first protuberance into place because, while the first opening is configured to allow the protuberance to enter from above, when the tower is rotated the boss travels through an undercut hollow in the crossbar, preventing the first protuberance from being released from the first opening. The parties describe this as a "bayonet-style" attachment.

When the tower is rotated, the second protuberance engages the second opening from the side. In the process, it displaces the spring loaded plunger, which comes to rest in a slot in the second protuberance, having the effect of locking the second protuberance in place. When that rotation is complete, the tower and the crossbar are secured together in vertical alignment.

2. Disputed Claim Terms

a. undercut hollow (Claim 1)

The first disputed term is "undercut hollow". Mizuho proposes construing the term as "a channel into which a boss fits upon rotation" whereas defendants proffer "a chamber accessed through the recess".

The dispute is, in essence, whether the construction of

"undercut hollow" should include rotational language.

Defendants contend that rotation is merely a feature of the preferred embodiment of the invention which should not be read into the claims. That argument is tenuous because Claim 1 of the '562 Patent describes the tower as being attached to the crossbar through rotation. For instance, Claim 1 states that

[the] first protuberance rotatably fit[s] into said first opening of the crossbar, said first protuberance including a boss, said boss engaging a part of said first end support within said first opening.

Mizuho contends that its construction more accurately describes the rotational aspect of the undercut hollow, consistent with the claim, the specification and the prosecution history.

While it is "entirely proper" to consider the function of an invention in determining the meaning of a claim, Funai Elec. Co., Ltd. v. Daewoo Elecs. Corp., 616 F.3d 1357, 1366 (Fed. Cir. 2010), a construction which includes the rotational limitation is unnecessary here because that limitation is already embodied elsewhere in the claim, see, e.g. W.L. Gore & Assocs. v. C.R. Bard, Inc., No. 11-515, 2014 U.S. Dist. LEXIS 110140 at *17-18 (D. Del. Aug. 8, 2014). Moreover, omission of that language will not hinder a jury in understanding this simple term. Funai Elec. Co., 616 F.3d at 1366 (explaining that the criterion for functional construction is "whether the explanation aids the court and the jury in understanding the term as it is used in

the claimed invention"); see, e.g. St. Clair Intellectual Prop. Consultants v. Acer, Inc., No. 09-354-LPS, 2012 U.S. Dist. LEXIS 111021 at *17-18 (D. Del. Aug. 7, 2012). The Court will therefore construe "undercut hollow" as "a chamber accessed through the recess".

b. boss (Claim 1)

Here, again, the parties dispute whether rotational language should be included in the construction. Mizuho proposes "a protrusion that facilitates rotational locking". Defendants proffer "a protrusion that engages the recess and the undercut hollow".

Here, both parties propose a functional construction. For the reasons explained in the context of the previous disputed term, the Court will adopt neither and construe "boss" as "a protrusion on the first protuberance".

c. a spring loaded plunger (All claims)

The last disputed term is "a spring loaded plunger". Mizuho submits that the term has a plain and ordinary meaning and requires no construction. In the alternative, plaintiff suggests "a plunger whose movement is allowed by loading a spring". Defendants urge that the term be construed as "a plunger biased by a spring".

The dispute turns on a single issue: whether the claimed plunger must be directly connected to a spring or whether it may

be indirectly connected to a spring. Plaintiff notes that “biasing” a spring against something is only one way to load it, and contends that the construction should be consistent with the broader term, “loaded”, which the patentee chose to use, citing Generation II Orthotics Inc. v. Medical Tech. Inc., 263 F.3d 1356, 1367 (Fed. Cir. 2001). Defendants argue that allowing for indirect loading changes the meaning of the disputed term and is unsupported by the specification.

The Court agrees with Mizuho. While the word “biased” is used in the specification and the figures depict a directly loaded, i.e. biased, spring, in the claim at issue the patentee chose to use “loaded”, a different and broader term. In light of that choice, there is no basis to construe the term as co-extensive with the narrower one which the patentee could have used but did not. See Jack Guttman, Inc. v. Kopykake Enters., Inc., 302 F.3d 1352, 1358 (Fed. Cir. 2002) (declining to limit “non-tortuous copy path” to a substantially straight copy path where the former could encompass curved, but non-tortuous, paths). Nor is it warranted to construe the claim as co-extensive with a preferred embodiment where the claim language is broader. Generation II Orthotics, 263 F.3d at 1367 (warning against “importing a characteristic of a disclosed or preferred embodiment into [the] term”); Inline Plastics Corp. v. EasyPak, 799 F.3d 1364, 1368-69 (Fed. Cir. 2015) (same).

The Court therefore will construe "a spring loaded plunger" as "a plunger whose movement is allowed by loading a spring".

III. Correction of the '481 Patent

The final disputed matter to be considered is whether the Court can and should correct a purported error in Claim 12 of the '481 Patent. That claim is reproduced in relevant part below, with the allegedly erroneous language underlined.

12. A system of an adjustable support apparatus for a surgery table, comprising

- • •
- a first tower extending between first and second ends of the first tower, the second end of the first tower being coupled to the top surface of the first crossbar so that the first tower is perpendicular to the first crossbar, the first tower configured to removably fix with the first crossbar such that the first crossbar and the first tower securely engage with each other, the first crossbar configured to rotate along an axis perpendicular to a plane of the first crossbar while fixed to the first tower; and
- a first carriage coupled to the first tower, the first carriage configured to move in upward and downward directions with respect to the first crossbar, the first carriage comprising
 - a first handle and a second handle at opposite first end and second end of the first carriage,
 - at least one pawl,
 - at least one gear rack, and
 - a controller configured to move the at least one pawl into and out of engagement with the at least one gear rack, wherein when the at least one pawl is in engagement with the at least one gear rack, the first carriage is prevented from moving in the upward and downward directions.

Mizuho asserts that Claim 12 has a judicially correctable error, namely, that the gear rack should be described as a

component in the tower, not the carriage. Because the movement of the carriage is relative to the gear rack, Mizuho contends that the gear rack cannot be part of the carriage. In essence, Mizuho's argument is that the carriage as presently described purports to accomplish the mechanical equivalent of pulling itself up by its bootstraps. Defendants oppose correction for reasons detailed below.

A. Legal Standard

A court may correct an "obvious typographical error" in a patent if 1) the correction is not subject to reasonable debate upon consideration of the claims and the specification and 2) the prosecution history does not suggest a different interpretation of the claim. Novo Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1354 (Fed. Cir. 2003); Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp., 587 F.3d 1339, 1353 (Fed. Cir. 2009). The error must be evident from the face of the patent. Pavo Solutions LLC v. Kingston Tech. Co., 35 F.4th 1367, 2022 U.S. App. LEXIS 15317 at *8 (Fed. Cir. 2022) (citing Grp. One, Ltd. v. Hallmark Cards, Inc., 407 F.3d 1297, 1303 (Fed. Cir. 2005)). The Court judges the purported error from the point of view of a person of ordinary skill in the art. Ultimax, 587 F.3d at 1353.

Judicial correction is "a narrow remedy to be used sparingly". Gilead Scis., Inc. v. Watson Labs., Inc., No. 15-

2350-RMB, 2016 U.S. Dist. LEXIS 55763 at *5 (D.N.J. Apr. 26, 2016). The Court may not redraft a claim simply because the patented invention, as claimed, is inoperable. Rembrandt Data Techs., LP v. AOL, LLC, 641 F.3d 1331, 1339 (Fed Cir. 2011). In some cases, the inoperability or incoherence of a claim may indicate an error. See, e.g. Ultimax, 587 F.3d at 1353 (adding comma to chemical formula where a person of ordinary skill in the art would know one to be necessary because, inter alia, the claimed formula "corresponds to no known mineral"). Even then, however, the Court may not correct the patent unless the purported error is amenable to judicial correction. Rembrandt Data Techs., 641 F.3d at 1339-40.

B. Application

Mizuho argues that because the vertical movement of the carriage is relative to the gear rack, Claim 12 contains an obvious error when it states that the gear rack is located on the carriage, not the tower. In support, Mizuho refers to Claims 9 and 40, which claim a carriage

configured to travel in the upward and downward directions relative to the gear rack [and] configured to travel in the upward and downward direction relative to the at least one gear rack

and notes that the specification and figures confirm that understanding. Mizuho also reports that a patent examiner, considering a related application, stated that the placement of

the gear rack on the carriage rendered the invention "likely . . . inoperable" and concluded that, for the purposes of prosecution, the gear rack was to be treated as located on the tower.

Defendants oppose correction and submit an opinion from Samir A. Nayfeh, Ph.D., an expert in the field of mechanical engineering, who attests that there are three other ways that the claim could be corrected, each equally consistent with the claim language and the specification. They submit that because the proper construction is subject to reasonable debate, correction is unavailable.

The inclusion of the term "at least one gear rack" in the carriage portion of Claim 12 is an obvious error, evident from the face of the patent. Pavo Solutions, 2022 U.S. App. LEXIS 15317 at *8. Claim 12 appears to be the only provision in the entire patent in which the gear rack is described as part of the carriage, an arrangement which "facially [does] not make sense", and it is apparent from the other claims, the specification and the figures that it was incorrectly included. Id. at *12. Claim 3, for instance, discloses a tower comprising a gear rack, and the vertical movement of the carriage relative to the gear rack is recited on numerous occasions. The specification and figures are consistent. See id.

Finding the inclusion of the term "at least one gear rack"

as an element of the carriage to be an obvious error, the Court turns to the proposed corrections. See id. at *14. The Court is unconvinced that any of the purported, alternative corrections proposed by Dr. Nayfeh is viable because each would contradict the claims or specification of the '481 Patent. Novo Indus., 350 F.3d at 1354 (explaining that the correction must not be "subject to reasonable debate based on consideration of the claim language and the specification").

All three alternatives leave the gear rack in place on the carriage but remove another element. In the first, the pawl is moved to the tower but Claim 3 states that the "pawl mechanism is incorporated into the carriage", an arrangement also depicted by the figures. The second alternative moves the pawl and the pawl controller to the tower and is unavailing for the same reason. In the final alternative, the pawl remains on the carriage and the gear rack on the tower but the pawl controller is moved to some other location detached from both the carriage and the tower, an arrangement which finds no support in the claims or specification.

Mizuho proposes that the Court correct the '481 Patent by 1) deleting the phrase "at least one gear rack" from its present location and 2) re-inserting it in Claim 12 as an element of the tower.

It is beyond reasonable debate that the term "at least one

“gear rack” should be deleted from where it presently appears.

Novo Indus., 350 F.3d at 1354. To the extent that Claim 12 describes the gear rack as part of the carriage, it is irreconcilable with the other claims and the specification. As previously discussed, defendants have not proffered an alternative consistent with the intrinsic evidence, and the Court does not discern one. Thus, the Court concludes that the patent may be corrected by removal of the term “at least one gear rack” from the elements in Claim 12 comprising the carriage. Pavo Solutions, 2022 U.S. App. LEXIS 15317 at *14.

The re-insertion of the term “at least one gear rack” as an element comprising the tower is likewise indisputable. Novo Indus., 350 F.3d at 1354. First, it is apparent what language is to be added to the claim. This case differs from Rembrandt or Group One, Ltd. v. Hallmark Cards, in which the Federal Circuit denied correction, because the proposed language appears in the patent, albeit in the wrong place. Rembrandt, 641 F.3d at 1339 (declining to add language that did not appear in patent and whose addition was not obvious to a person of ordinary skill in the art); Group One, Ltd. v. Hallmark Cards, 407 F.3d 1297, 1303 (Fed. Cir. 2005) (declining to correct patent where it could not be “discern[ed] what language is missing simply by reading the patent”).

Second, it is undisputed that the term “at least one gear

rack" belongs in the portion of Claim 12 describing the tower. While the term could plausibly be inserted in a separate, subsequent paragraph, e.g. "a gear rack extending along a vertical direction of the tower", the claim scope would not differ and thus any residual uncertainty as to the exact placement of the term does not preclude correction. See CBT Flint Partners LLC v. ReturnPath, Inc., 654 F.3d 1353, 1358-59 (Fed. Cir. 2011) (holding that district court had authority to correct patent where three plausible corrections existed but all three resulted in the same claim scope); Pavo Solutions, 2022 U.S. App. LEXIS 15317 at *14-15.

The Court declines to conduct an exhaustive recitation of the prosecution history but it similarly supports correction which defendants have not effectively opposed.¹

Claim 12 will therefore be corrected as follows:

12. A system of an adjustable support apparatus for a surgery table, comprising

. . . .

a first tower **comprising at least one gear rack** extending between first and second ends of the first tower. . . .
a first carriage coupled to the first tower, the first carriage configured to move in upward and downward

¹ Although only excerpts of the prosecution history of the '481 Patent have been appended to the pleadings, it is a public record of which the Court takes judicial notice. See SB Holdings, LLC v. Vivint Smart Home, Inc., No. 20-886, 2021 U.S. Dist. LEXIS 82871 at *2-3 (E.D. Tex. Apr. 30, 2021) (explaining that "[c]ourts routinely take judicial notice of patents, prosecution history and patent applications" and collecting cases).

directions with respect to the first crossbar, the first carriage comprising

. . . .
at least one pawl,
~~at least one gear rack,~~ and
. . . .

ORDER

In accordance with the foregoing,

- 1) the term "move[s][ing]/travel in [the] upward and downward directions" means "**move[s][ing]/travel in [the] upward and downward directions such that a pawl moves to and can mesh with a different recess in the gear rack**";
- 2) the term "coupled to" means "**directly or indirectly connected to**";

the term "disengage one or more pawls from a gear rack / the pawl mechanism . . . configured to engage and disengage the gear rack / move the at least one pawl into and out of engagement with the at least one gear rack / the pawl mechanism configured to engage and disengage the gear rack / disengage and engage one or more pawls from the gear rack" means "**stop meshing with one or more pawls from a gear rack / the pawl mechanism . . . configured to mesh with and stop meshing with the gear rack / move the at least one pawl into and out of meshing with the at least one gear rack / the pawl mechanism configured to mesh with and stop meshing with the gear rack / stop meshing with and mesh with one or more pawls from the gear rack**";

- 3) the term "a gear rack" means "**a linear gear**";
- 4) the term "a slide lock knob" means "**a knob configured to be rotated**";
- 5) the term "an undercut hollow" means "**a chamber accessed through the recess**";
- 6) the term "boss" means "**a protrusion on the first protuberance**"; and
- 7) the term "a spring loaded plunger" means "**a plunger whose movement is allowed by loading a spring**".

Claim 12 of United States patent number 10,888,481 is corrected as follows: the words "at least one gear rack" are struck from where they currently appear and the words "comprising at least one gear rack" are inserted after the phrase "a first tower".

So ordered.

/s/ Nathaniel M. Gorton
Nathaniel M. Gorton
United States District Judge

Dated: July 6, 2022